

CLAIMS

- 1 1. A method for concealing errors in a coded image formed of an array of
2 macroblocks, comprising the steps of:
3 identifying macroblocks within the array having missing/corrupted pixel values;
4 deriving at least one intra-prediction mode for each identified macroblock to define a
5 concealment direction, the at least one intra-prediction mode derived in accordance with the
6 coded image;
7 establishing an interpolation filter for the identified intra-prediction mode for estimating
8 concealment values for each identified macroblock along the concealment direction; and
9 concealing the identified macroblock in accordance with the estimated concealment
10 values.
- 1 2. The method according to claim 1 wherein the image is coded in accordance with
2 the H.264 coding technique and wherein the step of deriving the at least one intra-prediction
3 mode further comprises the step of deriving an Intra_4x4 prediction mode prescribed by the
4 H.264 coding technique.
- 1 3. The method according to claim 2 wherein step of establishing the interpolation
2 filter further comprises selecting the interpolation filter prescribed by the H.264 coding technique
3 for the derived Intra_4x4 prediction mode.
- 1 4. The method according to claim 2 wherein step of establishing the interpolation
2 filter further comprises the step of deriving a interpolation filter mirroring the interpolation filter
3 prescribed by the H.264 coding technique for the derived Intra_4x4 prediction mode.
- 1 6. The method according to claim 2 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 0 (vertical) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 0.
- 1 7. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 1 (horizontal) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 1.

- 17 -

1 8. The method according to claim 2 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 2 (DC) and wherein the step of establishing the interpolation filter further
3 comprises the step independently weighing a sum of pixel values from a neighboring column and
4 a neighboring row in a vertical direction and a horizontal direction, respectively.

1 9. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 3 (Diagonal down left) and wherein the derived interpolation filter comprises
3 the interpolation filter prescribed by the H.264 coding technique for Mode 3.

1 10. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 7 (vertical left) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 7.

1 11. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 4 (Diagonal down right) and wherein the derived interpolation filter comprises
3 the interpolation filter prescribed by the H.264 coding technique for Mode 4.

1 12. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 5 (Vertical right) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 5.

1 13. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 6 (horizontal down) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 6.

1 14. The method according to claim 4 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 8 (horizontal up) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 8.

1 15. A method for concealing errors in a coded image comprised of an array of
2 macroblocks, the image coded in accordance with the H.264 coding technique, the method,
3 comprising the steps of:

- 18 -

4 identifying macroblocks within the array having missing/corrupted pixel values;
5 deriving at least one Intra_4x4 prediction mode in accordance with the H.264 coding
6 technique for each identified macroblock to define a concealment direction;
7 establishing an interpolation filter for the identified intra-prediction mode for estimating
8 concealment values for each identified macroblock the along the concealment direction; and
9 concealing the identified macroblock in accordance with the estimated concealment
10 values.

1 16. The method according to claim 15 wherein step of establishing the interpolation
2 filter further comprises selecting the interpolation filter prescribed by the H.264 coding technique
3 for the derived Intra_4x4 prediction mode.

1 17. The method according to claim 15 wherein step of establishing the interpolation
2 filter further comprises the step of deriving a interpolation filter mirroring the interpolation filter
3 prescribed by the H.264 coding technique for the derived Intra_4x4 prediction mode.

1 18. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 1 (horizontal) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 1.

1 19. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 3 (Diagonal down left) and wherein the derived interpolation filter comprises
3 the interpolation filter prescribed by the H.264 coding technique for Mode 3.

1 20. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 7 (vertical left) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 7.

1 21. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 4 (Diagonal down right) and wherein the derived interpolation filter comprises
3 the interpolation filter prescribed by the H.264 coding technique for Mode 4.

- 19 -

1 22. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 5 (Vertical right) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 5.

1 23. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 6 (horizontal down) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 6.

1 24. The method according to claim 15 wherein the derived Intra_4x4 prediction mode
2 comprises Mode 8 (horizontal up) and wherein the derived interpolation filter comprises the
3 interpolation filter prescribed by the H.264 coding technique for Mode 8.